

WHAT IS CLAIMED IS:

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1. In a multi-carrier CDMA transmission system that reproduces data symbols, aligns the reproduced data symbols along a frequency axis, multiplies the reproduced data symbols by a spreading code and performs multiplex transmission of data using a plurality of sub-carriers of different frequencies, a signal format of a transmission signal used when inserting a pilot symbol for estimating a variation of channel and performing synchronous detection,

15 the pilot symbol including: a common pilot symbol for the purpose of estimating a channel common to each user; and

20 a user-specific pilot symbol that performs communication in a channel different from the above-described channel.

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2. The multi-carrier CDMA transmission system signal format as claimed in claim 1, wherein all or some of the plurality of sub-carriers used in signal transmission are used as sub-carriers when spreading the pilot symbol along a frequency axis.

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3. The multi-carrier CDMA transmission system signal format as claimed in claim 1 or claim 2, wherein the pilot symbols are orthogonal on the

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spread frequency axis, and further, pilot symbol sequences are orthogonal on a time axis.

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4. The multi-carrier CDMA transmission system signal format as claimed in claim 1, wherein:

the signal format allots some of the
10 plurality of sub-carriers used in the signal transmission to the pilot symbols discretely along the frequency axis and inserts a symbol sequence that multiplexes the common pilot symbol and the individual pilot symbol using a spreading signal in
15 a direction of the time axis into the sub-carriers allotted to the pilot symbols.

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5. The multi-carrier CDMA transmission system signal format as claimed in claim 4, wherein the spreading code for the common pilot symbol and the spreading code for the specific pilot symbol are
25 orthogonal.

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